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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.           | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------------|------------------|
| 10/627,165  | 07/24/2003  | Thomas Laursen       | 004.0033                      | 2527             |
| 29906 7590 03/06/2007<br>INGRASSIA FISHER & LORENZ, P.C.<br>7150 E. CAMELBACK, STE. 325<br>SCOTTSDALE, AZ 85251 |             |                      | EXAMINER<br>SMITH, NICHOLAS A |                  |
|   |             |                      | ART UNIT                      | PAPER NUMBER     |
|   |             |                      | 1742                          |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE  |             | MAIL DATE            | DELIVERY MODE                 |                  |
| 3 MONTHS  |             | 03/06/2007           | PAPER                         |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/627,165

Applicant(s)

LAURSEN ET AL.

Examiner

Nicholas A. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 04 January 2007.

2a) ☒ This action is **FINAL**.

2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1-21 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some \* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date. \_\_\_\_\_.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### Status of Claims

1. Claims 1-21 remain for examination.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1, 7-8, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Saka et al. (US Patent 6,476,921).
4. In regards to claims 1, 7-8 and 17, Ueno in view of Saka et al. is applied to the claims for the same reasons as stated in paragraphs 5-10 of the previous office action.
5. Claims 2-3, 9-11, 13-14, 16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Saka et al. in regards to claim 1, and further in view of Hsu et al. (US 2003/0040188).
6. In regards to claim(s) 2-3, 9-11, 13-14, 16 and 18-21, Ueno in view of Saka et al. and further in view of Hsu et al. is applied to the claims for the same reasons as stated in paragraph(s) 12-25 of the previous office action.
7. In regards to claim(s) 13 amendment "single soft polishing pad," Ueno in view of Saka et al. does disclose chemical mechanical planarizing as stated previously, but does not specifically disclose using a soft polishing pad.

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8. Hsu et al. teaches the use of a soft polishing pad as conventional in electrochemical mechanical polishing or chemical mechanical polishing process (paragraph [0064] and [0077]). It would have been obvious to one of ordinary skill in the art at the time of invention to use the soft polishing pad of Hsu et al. in Ueno in view of Saka et al.'s process as such practice is conventional in the arts of electrochemical mechanical polishing and chemical mechanical polishing (Hsu et al, paragraphs [0064] and [0077]).

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Saka et al. and further in view of Hsu et al. in regards to claim 2, and further in view of Sinha et al. (US Patent 6,551,935).

10. In regards to claim(s) 4, Ueno in view of Saka et al., further in view of Hsu et al. and further in view of Sinha et al. is applied to the claims for the same reasons as stated in paragraph(s) 27-28 of the previous office action.

11. Claims 4-6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Saka et al., and further in view of Hsu et al. in regards to claim 2, and further in view of Mahulikar et al. (US Patent 6,776,696).

12. In regards to claim(s) 4-6 and 15, Ueno in view of Saka et al., further in view of Hsu et al. and further in view of Mahulikar et al. is applied to the claims for the same reasons as stated in paragraph(s) 30-36 of the previous office action.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Saka et al. in regards to claim 1, and further in view of Mahulikar et al. (US Patent 6,776,696).

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14. In regards to claim(s) 12, Ueno in view of Saka et al. and further in view of Mahulikar et al. is applied to the claims for the same reasons as stated in paragraph(s) 38 of the previous office action.

***Response to Arguments***

15. Applicant's arguments filed 4 January 2007 have been fully considered but they are not persuasive. In regards to Applicant's argument that prior art does not teach a step of removing the copper layer and the barrier layer with a single polishing pad, Examiner reminds Applicant of Saka et al., col. 4, lines 29-56. More specifically, refer to col. 4, lines 47-48, "Further, the barrier layer may also removed." In regards to Applicant's argument that it was commonly believed that CMP required multiple polishing pads to planarize a workpiece's upper surface, Saka et al. (col. 4, lines 47-48) discloses that such CMP with a polishing pad (col. 4, line 33) can also remove the barrier layer in addition to copper layer. In regards to Applicant's argument that claim 13 feature of CMP the layer comprising copper and the barrier layer on a single soft polishing pad is not taught in the prior art, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, Applicant has only provided conclusion statements (not evidence) about the expected success of employing a single soft polishing pad to achieve a substantially planar surface.

***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

17. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS

  
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